

REMARKS

I. PENDING CLAIMS AND SUPPORT FOR AMENDMENTS

Claims 1-5 and 7-13 are pending in this application. Claims 1 has been amended in order to more clearly describe the claimed invention. Support for this amendment can be found in the specification of the application at page 2, lines 9-10 and 16-19.

Claim 13 has been amended in response to the Examiner's rejection of claim 13 under 35 U.S.C. § 101. Specifically, claim 13 has been amended as a method of enhancing the activity of an oxathiazine against fungi and is a proper definition of a process. Therefore, Applicants respectfully request withdrawal of this rejection.

New claims 14 and 15 have been added in order to more fully describe and claim the invention. Support for these new claims can be found in the specification at page 3, lines 14-17.

Claims 7, 9, and 12 have been amended to depend only from claim 1 in response to the objection under 37 CFR 1.75(c). As amended, these claims depend only from claim 1. Therefore, Applicants respectfully request withdrawal of this rejection.

No new matter has been added.

Applicants are interpreting the claims as reading on the elected species and any other compound that may be present in the formulation in accordance with the long recognized interpretation of the term "comprising" in U.S. patent claims. Any interpretation further restricting these claims is incorrect and contrary to established case law.

II. THE CLAIMS ARE PATENTABLE UNDER 35 U.S.C. § 112, 2nd paragraph

On pages 1-2 of the Office Action, the Examiner rejected claims 7, 9, 12, and 13 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. This rejection is respectfully traversed and reconsideration and withdrawal thereof are requested.

The Examiner rejected claim 7, stating that the limitation “cyproconazole” in line 4 lacks sufficient antecedent basis. Claim 7 has been amended to depend from claim 1. Therefore, withdrawal of this rejection is respectfully requested.

The Examiner rejected claims 9 and 12, stating that the term “other material” is a relative term which renders the claims indefinite. The term “other material” does not render the claims indefinite because the meaning of this term would be clear to one of skill in the art in view of the description at page 2, lines 26-34. Examples of such “other materials” are provided in the specification, and one of skill in the art would be aware of what materials would benefit from being protected from or treated for fungi. Therefore, withdrawal of this rejection is respectfully requested.

The Examiner rejected claim 13 on page 2, stating the claim is indefinite because it recites a use without any active, positive steps delimiting how this use is actually practiced. Claim 13 has been rewritten as a method claim and is therefore not indefinite. Withdrawal of this rejection is respectfully requested.

III. THE CLAIMS ARE PATENTABLE UNDER 35 U.S.C. § 103(a)

On pages 4-5 of the Office Action, rejected claims 1-5 and 7-12 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,777,110 to Davis et al. and U.S. Patent No. 6,423,732 to Rustenburg et al. This rejection is respectfully traversed and reconsideration and withdrawal thereof are requested.

According to the Examiner, it would have been obvious to one of ordinary skill in the art to combine the cited references to obtain the invention. The Examiner stated that one would have been motivated to combine the references in order to enhance the effectiveness of the method of protecting wood against wood destroying fungi.

The Examiner has failed to state a prima facie case of obviousness, for one reason, because the combination of Davis *et al.* and Rustenburg *et al.* does not produce the claimed invention. To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974). Neither Davis *et al.* nor Rustenburg *et al.* teach a wood preservative formulation comprising oxathiazine and a quaternary ammonium compound or oxathiazine and a triazole in synergistic proportions.

This invention is directed to providing compositions that have improved activity against soft rot fungi. Specifically, claim 1 requires a preservative composition comprising, in synergistic proportions, an oxathiazine compound plus one or more of a quaternary ammonium compound and a triazole compound. Thus, claim 1 is directed to a preservative

composition comprising an oxathiazine compound and at least one of a quaternary ammonium compound or a triazole compound.

Davis *et al.* is the U.S. equivalent to WO 95/06043, discussed in the specification of this application. As noted in the application, “[a]s with most individual active ingredients, oxathiazines by themselves do not provide protection against all fungi, bacteria, and other microorganisms. . . . Therefore, WO 95/06043 discusses the possibility of enhancing the spectrum of activity by addition of other active ingredients, binding agents, co-solvents etc.” Application, page 1, lines 14-21. Additionally, “[o]rganic wood preservative formulations such as those containing oxathiazines are expensive to formulate and manufacture” Application, page 1, lines 22-27. Thus, while the use of oxathiazines against fungi that damage wood is disclosed in Davis *et al.*, there are disadvantages associated with their use, and improvements would be an advantage to the industry.

Applicants have found, surprisingly, that the addition of a quaternary ammonium compound or a triazole compound, which themselves do not exhibit good activity against soft rot fungi, to an oxathiazine formulation leads to an increase in the activity of oxathiazines against soft rot fungi. There is a synergistic effect observed between oxathiazines and quaternary ammonium compounds and between oxathiazines and triazoles. Applicants have found that compositions having these components in synergistic proportions have this unexpected synergistic effect. *See e.g.* application, page 1, line 28 - page 2, line 10.

In contrast, Davis *et al.* generally discloses the use of oxathiazines in wood preservatives and fails to disclose a formulation including a quaternary ammonium

compound. While Davis *et al.* does disclose the possibility that a new oxathiazine compound could contain other known biocides, and lists several triazole compounds, it fails to recognize that the amounts of each should be sufficient to cause synergism to occur. The wood preservative formulations exemplified in Davis *et al.* include only oxathiazine, ethanol and water. The listing of several triazoles is included in a shotgun listing of various other compounds that may be added to oxathiazine in any amount. See Davis *et al.* col. 5, line 54 - col. 6, line 10. This general mention of triazoles along with other biocides demonstrates the failure of Davis *et al.* to recognize not only the distinction between triazoles and other suitable additives but also the benefit of a formulation comprising oxathiazine and a triazole in a synergistic combination. In fact, this disclosure of triazoles in this manner effectively teaches away from the recognition of the beneficial synergistic relationship between oxathiazine and a triazole by treating all of the additives, including the ones that are not triazoles, as equals. Davis *et al.* thus fails to disclose or suggest the surprisingly beneficial synergistic relationship between an oxathiazine and a second biocide, and one of ordinary skill in the art would therefore understand Davis *et al.* to disclose only that oxathiazines are useful in wood preservatives.

Any attempt to combine the disclosure of Rustenburg *et al.* with Davis *et al.* employs improper hindsight. Rustenburg *et al.* teaches the use of synergistic combinations of cyproconazole and a quaternary ammonium salt in the control and prevention of wood-destroying fungi. There is no teaching or suggestion that cyproconazole, or any triazole, or a quaternary ammonium compound, would be useful in enhancing the activity of an oxathiazine formulation

against fungi. In fact, Rustenburg *et al.* is silent regarding oxathiazines. The existence of a synergistic effect between these two components cannot indicate that there would be synergy between each of them individually and an oxathiazine, the one compulsory ingredient in the formulations of this invention. As the Examiner is doubtless well aware, synergism is by its very nature unpredictable. One cannot, therefore, extrapolate from synergism between A and B to expect synergism between A and C.

As shown in Table 1 and the discussion thereof on page 22 of this application, no effective protection of wood is achieved when Bardap 26, tebuconazole and propiconazole by themselves are tested against soft rot fungi belonging to the groups *Ascomycotina* and *Deuteromycotina*. One of ordinary skill in the art would therefore not have expected that the addition of a quaternary ammonium compound or a triazole to an oxathiazine formulation would improve its efficacy against soft rot fungi. The skilled person would therefore have had no motivation to add a quaternary ammonium compound or a triazole compound to an oxathiazine formulation.

In any event, as discussed above, the combination of of Rustenburg *et al.* with Davis *et al.* does not produce the claimed invention. Davis *et al.* does not contain any disclosure, alone or in combination with Rustenburg *et al.*, that would lead one of ordinary skill in the art to prepare a formulation comprising an oxathiazine compound and a quaternary ammonium compound and/or a triazole compound for use in the treatment of wood against soft rot fungi with the expectation of providing a superior formulation.

As demonstrated, neither of the cited references disclose or suggest a wood preservative formulation comprising oxathiazine and a quaternary ammonium compound or oxathiazine and a triazole in synergistic proportions. The combination of Davis *et al.* and Rustenburg *et al.* does not produce the invention as claimed. The dependent claims are patentable for at least the reasons the independent claims are patentable and may be patentable for additional reasons. For at least these reasons, the Examiner's rejections are traversed and reconsideration and withdrawal thereof are respectfully requested.

CONCLUSION

For at least the reasons detailed above, the present application is in condition for immediate allowance, and an early notification to that effect is earnestly solicited.

Please charge any additional fees or credit any overpayment to Deposit Order Account No. 11-0855.

Respectfully submitted,

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